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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/653,336	09/02/2003	Jerry Lynn Cabe	132950	2933

7590 10/01/2004  
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St. Louis, MO 63102

EXAMINER

NGUYEN, NINH H

ART UNIT	PAPER NUMBER
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3745

DATE MAILED: 10/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/653,336

Applicant(s)

CABE ET AL.

Examiner

Ninh H. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 09/02/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

1. Claim 13 is objected to because of the following informalities: the claim should be dependent on claim 12 instead of claim 6 as recited. Appropriate correction is required.

Note: it is assumed that claim 13 is dependent on claim 12 in this Office Action.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Popp (4,595,207).

Popp discloses a gas turbine engine (abstract; Figs. 3, 4) comprising: a first rotatable shaft 10B (Fig. 4); a second rotatable shaft 1B; and a seal assembly 3 extending between the first and second rotatable shafts to facilitate preventing leakage through a gap defined between the first and second rotatable shafts, the seal assembly comprising a brush seal (Fig. 4) and a plurality of seal projections extending outwardly from the brush seal, the brush seal sealingly coupled to the first rotatable shaft such that the plurality of seal projections contact the second rotatable shaft to facilitate sealing between the first and second rotatable shafts;

wherein the seal assembly brush seal rotates concurrently with the first rotatable shaft 10B (Fig. 4);

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wherein the first rotatable shaft 10B comprises a pair of opposite ends, the second rotatable shaft comprises a pair of opposite ends, the brush seal is coupled to the first rotatable shaft intermediate the first rotatable shaft ends (Fig. 4);

wherein the first rotatable shaft comprises a pair of opposite ends, the second rotatable shaft comprises a pair of opposite ends, the plurality of seal projections contact the second rotatable shaft intermediate the second rotatable shaft ends (Fig. 4);

wherein the seal assembly plurality of projections comprise a plurality of bristles formed integrally with the brush seal (Fig. 4);

wherein the seal assembly plurality of seal projections inherently facilitate reducing leakage through the seal assembly due to thermal, centrifugal, and gyroscopic forces;

wherein the rotatable first shaft rotates in a first direction, the second rotatable shaft rotates in a second direction that is opposite the first direction of rotation (Fig. 3); and

wherein the first and second rotatable shafts rotate in the same rotational direction (Fig. 4).

#### ***Prior Art***

The prior art made of record but not relied upon is considered pertinent to applicant's disclosure and consists of 2 patents.

Zawaski et al. (4,995,620) and Braun et al. (6,244,599) are cited to show different brush seal arrangements between relatively rotating shafts.

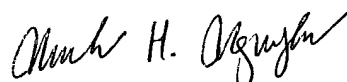
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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Ninh Nguyen whose telephone number is (703) 305-0061 or (571) 272-4823 after November 18, 2004. The examiner can be normally reached on Monday-Friday from 7:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached at (703) 308-1044 or (571) 272-4820 after November 18, 2004. The fax number for this group is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

  
**NINH H. NGUYEN**  
**PRIMARY EXAMINER**

Nhn  
September 30, 2004